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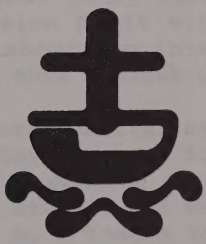
REINTEGRATING GOD'S CREATION

A Paper for Discussion

REINTEGRATING GOD'S CREATION



WORLD COUNCIL OF CHURCHES

Programme Unit on Faith and Witness

Sub-unit on Church and Society

0956479

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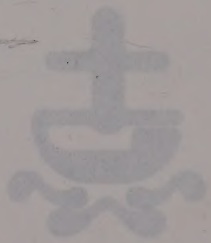
The texts were edited and carefully revised; any remaining errors are the responsibility of the editors.

We welcome ideas, comments and suggestions from readers which help us to keep this discussion paper fresh and usefull.



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PREFACE

The 1983 Vancouver call to engage churches and church members "in a conciliar process of mutual commitment (covenant) to justice, peace and the integrity of creation" (JPIC) reached me while I was organizing a West-German follow-up to the 1979 conference on Faith, Science and the Future. I must confess this new phrase was irritating at the beginning - why did the Sixth Assembly abandon the former term which called for a "Struggle for a Just, Participatory and Sustainable Society"(JPSS)? What was the difference between both phrases? ...

After much discussion it became evident that the new term was more meaningful. It incorporated the two basic concepts humankind should achieve: justice and peace, and it was less "human--centered" because it asked us to respect the "integrity of all creation".

Three years later I found myself working with the WCC, in a subunit which has a rich tradition in the field of intergity of creation, even if former discussions called it "The Future of Man and Society in a World of Science-Based Technology", "Science and Technology for Human Development" or "The Social and Ecological Effects of Rapid Technological Change and the Control of Technology".

I organized my work and in November 1986 attended the First International Consultation on JPIC. As I was still a newcomer in the ecumenical movement, I listened very carefully to get the meaning of the discussions. To my surprise I began to realize that most of the discussion dealt with justice and peace but almost nothing was said about the integrity of creation. Some other participants shared this impression.

In February 1987, being more familiar with the work of the WCC, I felt there was a need to have a paper for discussion on the issue of Integrity of Creation in context with the whole JPIC-process. I was aware that a lot of studies and work had already been done, but not in this context. So I looked for a small group of theologians and scientists to draft such a discussion paper.

We met in May 1987 in Amsterdam and Douglas John Hall, a member of the group, describes in (the edited version of) his introduction who participated, how the group worked etc. Looking at the outcome of the Amsterdam meeting, I would like to call it a "theological hamburger": there is a science-based top part called "The Disintegration of Creation", which is followed by a big theological-based middle part "The Integrity of Creation" and there is another science-based bottom part - "The Re-integration of Creation."

All papers were read during the meeting and the participants agreed to leave them as they were. We tried to avoid exclusive language feeling that the paper should be readable for lay people as well as for theologians. Back in Geneva and with a feedback from the authors, I still felt the need for some editing and I hope that we have done it carefully enough, but any remaining errors are the responsibility of the editors.

Ans van der Bent provided a select bibliography on the wholeness of God's Creation which I hope the reader finds helpful for further studies. Finally Mady L. Thung and I added a postscript to encourage the reader to become involved in the process of Re-integrating God's Creation.

Geneva, September 1987

Bernd Schulze

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INTRODUCTION

(by Douglas J. Hall, ed. by Church and Society)

> "The next few decades are crucial. The time has come to break out of past patterns. Attempts to maintain social and ecological stability through old approaches to development and environmental protection will increase instability. Security must be sought through change."

These words appear in the final paragraphs of the report of the World Commission on Environment and Development, issued to the public at the end of April, 1987. They were circulated to us as guests of the "Symposium on the Environment" sponsored by the Instituut voor´ Milieuvraagstukken (Institute for Environmental Studies) of the Free University of Amsterdam, which coincided with our meeting here under the auspices of the World Council of Churches.

"Security must be sought through change, but", wondered one of the main speakers of the symposium, "do we really want change?" Perhaps we are so thoroughly locked into our patterns of growth and our anxiety to sustain our present relative security (especially amongst the First World nations where that security can still seem to have a basis) that we are more ready to jeopardize the future of our children than to alter our own behaviour. The future generations, we were starkly reminded, do not vote. They cannot challenge our present decisions.

Many, even amongst the disenchanted of our post-Christian era, regard the churches as agents of change. If the change that is required is at the level of fundamental attitudes, expectations, values and images of human beings (and that is, according to the Amsterdam Institute for Environmental Studies and many others in the academic community, indeed the case), then presumably religion ought to be expected to play a vital role. Where it is taken with any kind of seriousness, religious faith is precisely about our most basic beliefs about reality and our most formative conceptions of who we are, and what our "chief end" might be.

At the same time it is essential that Christians, with their long history of a "sucessful" culture, be wary of regarding themselves uncritically as primary agents of change. Those of us who are cognizant of the hoary past of our religion will recognize that precisely in the area of nature and "the integrity of creation" we have a dubious heritage. It can even be asked (it has been and still is!) whether the Judeo-Christian tradition as a whole, and the Christian religion in particular, has not been an important force in providing the Western world with an image of both the human, and of the non- or super-human, which has resulted in the contemporary multifold crises of the environment. Strong emphasis has been placed upon: the relation of the human to the divine, upon anthropocentrism (with it's implied denigration of "lesser" creatures), an almost exclusive preoccupation with the human soul, and a language of heavenly longing. Hasn't the Christian faith thus created a climate of opinion which - at least amongst the peoples of the Northern hemisphere - encouraged human beings and communities to regard the natural world as a mere stage upon

which to play out their historic roles. This stage was seen as a vast and infinitely resillient reservoir from which to garner the raw materials for their empires, an inanimate and unfeeling "thing" over which they had been granted unqualified "dominion", and which indeed they had a duty under God to "subdue".

Is it perhaps such questions as these - existential thoughts that "wound from behind" (Kierkegaard) - which have prevented the churches from devoting much time to the third sub-theme of the triad adopted by the WCC at Vancouver: "Justice, Peace, and the Integrity of Creation". Are we hesitant to embark on this aspect, because we recognize at some level of our subconsciousness an awareness of how it might call into question whole segments of our dearly held doctrines, and challenge the very foundations of our faith? For one thing, we have never been able clearly to make up our minds whether this world - this material creation, this earth, this flesh - should be for us a matter of "ultimate concern" (Tillich). Can we love both God and the world? If so, then why have we been able to inculcate in our members and adherents over the centuries so little by way of concrete love of this world, particularly its non-human parts?

However such unsettling questions may be answered in the long run, we have to begin with the fact that to date our constituencies have devoted very little attention either to the earlier WCC concern for a "sustainable society" (JPSS) or to the present one for "the integrity of creation" (JPIC). This was already noted and emphasized at the first international consultation on the theme held in Glion (Switzerland) in November 1986. Many churches and grass-root movements throughout the world occupy themselves with a whole constellation of problems centred on "Justice", and rightly so, for they would otherwise hardly reflect the "preferential option for the poor" that is at the heart of the gospel. "Peace",too, has become a watchword of millions of Christians throughout the world who struggle with others to create viable political possibilities for world peace in place of unbridled power and violence.

As was said repeatedly at Glion, - however, most memorably in the address of Carl Friedrich von Weizsäcker - there can be no peace without justice, no justice without care for the earth, and no attention to the earth's integrity without the struggle for peace, etc. In short, we are dealing with a seamless robe of crises, and to ignore any one of them is to distort the character of each and all. (The same point was also made at a Church and Society Asian regional consultation on "New Technology, Work and the Environment" held in Manila in January 1986 *).

Our specific mandate, consequently, has been to address ourselves explicitly to the neglected sub-theme of the triad - though not in isolation from the other two referents. In this we hope to alert the attention of all who have concern for the total "JPIC" theme to the manifold implications of this particularly critical issue amongst the "three momentous instabilities of our time" (Charles Birch).

* Published as Technology from the Underside, NCCP/WCC, 1986.

Who Are We?

We are an ad hoc group of seven persons, invited to a meeting in Amsterdam by Bernd Schulze, Consultant to the Sub-Unit on Church and Society, assisted by Margot Wahl. Three of us are scientists working on vital environmental topics; one is a free lance journalist, one is involved in interdisciplinary work involving the church and the academic community, and two of us are professional theologians.

From the outset we have been conscious of the limited nature of our expertise (there are obvious gaps in the areas of economics and political science), and we have also recognized and lamented the circumscribed nature of the time spent together on this task, which is staggering in its scope and magnitude.

At the same time we have been aware from the very outset of our task of an exceptional degree of unanimity - indeed, of communion of mind and spirit. Thus despite all our initial misgivings about the prospect of achieving even a consensus, let alone the beginnings of wisdom, we have rather quickly and spontaneously carried forward our work and have set out a preliminary statement on the theme of the integrity of creation which we hope will be helpful for the debate in the churches.

What follows is not a polished statement. It has not been qualified, balanced, written and rewritten several times, as is the fate of many ecclesiastical and other group documents. We did not have time for such luxuries. Perhaps our readers will think that we ought to given ourselves such time, but then these conciliar and editorial processes might have killed the very thing that has been of the greatest source of exhilaration and encouragement to us - the spontaneity of our dialogue. How many church documents have died the death of a thousand qualifications? We saw no reason to kill yet another, but on the contrary felt that there would be value in submitting to the WCC, our host organization, and to appropriate public bodies a more or less exploratory document. Its primary virtue lies in the concrete demonstration of the fact that science and faith can meet one another and engage in intensive discourse at an historic moment when precisely such discourse is required. Here in Amsterdam in a Hotel under the auspices of an organisation dedicated to St. Francis of Assisi we have experienced an unusual sense of a common heritage and objective - a heritage and mission that focuses on the subject which from the heart of our two areas of discipline, science and Christian theology, we can serve and love: this world!

How We Have Organized Our Work

The scheme that suggested itself to us almost immediately as we reflected on the basic theme of our deliberations centres on the single metaphor of integrity and its derivatives. We reasoned that if we could group our thoughts around this one basic metaphor, our paper might itself acquire sufficient "integrity" to warrant being considered a unified piece of work, despite the variety of our areas of competence, our differing languages, our

different geographic contexts and different religious backgrounds, races and sex.

Given this central focus, our work naturally fell into three parts:

I. The Disintegration of the Creation
II. The Integrity of Creation
III. The Reintegration of Creation

Part I: Contrary to certain customary patterns of theological work, we decided to begin, not with the biblical and theological background to the theme "integrity of creation", but rather with the reasons why Christians must concern themselves with the issue in the first place. That is, we thought it best to begin where we are today, namely in a world facing massive ecological threats and "in bondage to decay" in more than just the spiritual sense.

Christian theology has traditionally had much to say about the fall of the world, and particularly of its presupposed "centre", the human creature. We might have repeated this exercise, to good or mediocre effect, but we wanted to be true to our own collegial commitment. We also felt that there would be some genuine benefit if church persons and those who regularly contemplate existence from the perspective of religious belief were to hear from the scientists among us how they regard creation in a state of crisis.

Part II: From this initial vantage point we returned to the more traditional concerns of our theologically trained colleagues who interpreted the scientific data of Part I. in order to help us clarify what is meant by the integrity of creation. On account of the complexity of the theological components this section is much longer than the other ones.

Part III: The third stage was obvious: if we start with "the question" and then return to what we believe to be the best source of "the answer", then logic, aided by the momentum of discoveries along the way, drives us to ask how we are to concretely apply an answer to this question. In what way does the tradition explored in Part II actually speak to the problems explored in Part I? Does Christian faith, from its best biblical and doctrinal resources, bring any wisdom to bear on the many-sided environmental crisis of our times? Does Christian faith have something to contribute to the mending of our world? How, as scientists and theologians together, can we address ourselves responsibly to the task of integrating our knowledge of the world?

Our purpose in writing

We hope of course, that this document will be able to speak to many, especially to members of the WCC's member churches and related bodies. We recognize that if it is to be circulated to a wide public, it then may be necessary to popularize it or provide appropriate guidelines for its interpretation. We hope that the spontaneity of the document will not be lost by simplification. We believe, as we have already said, that it is via the spontaneous interdisciplinary dialogue that has been the hallmark of our discussions that we are best able to communicate our con-

cerns. We have been enriched by this encounter and are grateful to the WCC who have made it possible, and who will receive this work.

Because of the dialogue form of the exercise we have been through, we have decided to identify, within the text, the authors of each part. We have done this primarily to illustrate in a concret way, the dialogue and character of our work, and its spontaneity. We have achieved, in a very short space of time, a remarkable degree of collegiality; but we are well aware that true communities of scholarship and faith do not shape themselves into a durable form in four days! For this reason we identified the writers of each section or sub-section. A list of contributers is appended, together with brief notes concerning their credentials.

1. THE DISINTEGRATION OF CREATION

1.1 OUR VIEW OF CREATION
(by James Lovelock)

Creation comprises the whole universe, known and unknown throughout the boundaries of space and time, from the beginning until now and into the future.

It is a property of the universe for time to move in one direction only - from the past to the present- and for things to run down. This universal tendency to decay is profound and so far unchallenged law.

Scientists - like most people - are curious about antecedents. Whether or not a person has a famous ancester is often seen as more interesting than his or her current potential. This curiosity leads scientists to spend great efforts investigating the ineffable - such as the origins of the Universe or of life.

Much of the universe is beyond our knowledge and imagination. It seems wise therefore to concentrate our thoughts on that tiny fragment of it where we live - the Earth. Scientists have estimated that our solar system originated 4.56 billion years ago. Life has existed on Earth at least 3.5 billions years - a timespan longer than the lifetime of many stars.

Theories about the origins of life and of the Earth fall into two principal categories. First is the ancient view held by many civilizations that the Earth is a living organism. This view was current among scientists in the eighteenth century and was put forward by James Hutton, the father of geology. It was discarded in the nineteenth century but has recently been reconsidered in the light of recent views of the Earth from space.

This modern view sees the whole planet; the air, the seas, the rocks and the living organisms upon it, as the largest expression of life. No sense of purpose or consciousness is invoked, the Earth is seen as alive in the way that a giant redwood tree is alive. Both are almost all dead matter, wood or rock, just a skin of living tissue spread thinly at the surface.

The other view of the Earth, the conventional wisdom, is of a dead planet that happens to have life upon it. According to this view the Earth is a ball of rock, moistened by the oceans, and encapsulated within a thin film of air. By chance the warmth received from the sun, and the chemical composition of the surface, have always been just right for life. Where they were not right the discrepancy was met by adaptation. For example, if the climate grows colder, animals evolve with thicker fur.

In between these opposing views of the Earth there has arisen in recent times a recognition that living organisms do alter the planetary environment. For example, the oxygen of the air comes wholly from the plants. But neither, the older conventional wisdom, nor the modern acceptance of some participation by organisms in the running of the Earth, is prepared to accept that life determines its own environment.

The theory of a living planet by contrast requires that the air, the oceans and the rocks constitute a single entity that is alive to the extent that it shares with other organisms the property of homeostasis. Homeostasis is the ability to keep internal conditions constant in spite of external environmental change.

For example: one of the consistent properties of stars is that they seem to increase their heat output as they grow older. On this basis the sun has increased its heat output by 25 % since life began.

The Earth of conventional wisdom would have had to evolve physically in just the right way to have kept the climate favourable for life. No such problem confronts a living Earth on which homeostasis maintains a constant and favorable environment.

The environment is perturbed not only by the increase of the sun's heat, but also by other events such as the impact of small planets that plunge in from space with devastating consequences. It is also perturbed by internal contradictions - the emergence of species that affect the environment unfavorably. This happened when oxygen first appeared as a major atmospheric gas and recently humans have begun significantly to alter the Earth's surface environment away from it's present state.

A consequence of the theory of a living Earth is that the view of the evolution of the species by natural selection is no longer sufficient. Evolution on a living planet requires that the evolution of the species and the evolution of the environment are tightly coupled. This is no mere conjecture but is well supported by fossil evidence.

Organisms are not just passengers adapting to a dead world of inanimate rocks. They are adapting to an atmosphere, ocean and surface that their ancestors have made.

Another consequence of taking the Earth to be alive is that soon after life appeared on the Earth when the dead planet and the living organisms were evolving independently there must have been a moment of union when the two evolutionary processes fused together to make the living planet we now know and of which we are a part.

For the greater part of history life has been represented by simple organisms like bacteria and these are still a vital part of the Earth. Only in the last 700 Million years have there been living things large enough to be seen by the naked eye and only within the last million years has humankind walked the Earth.

1.2 HOW AND WHY CREATION DISINTEGRATED
(by Adebisi Sowunmi)

Creation is a single dynamic entity whose component parts are closely interwoven and interdependent. The wholeness and oneness, i.e. the integrity of Creation, was duly recognised by early humans who were gatherer/hunters and who depended solely on wild plants and animals as well as the physical natural environment for their sustenance and survival. There are still a few communities today whose subsistence is based on wild plants and

the physical natural resources around them. The gathering/hunting communities know their environments very intimately and live in close association with them, identifying with them.

Communities of primary agriculturists, as for example those in the tropical forests of the central highlands of New Guinea, also maintain the integrity of Creation, their farms of mixed crops being very similar to the natural forest ecosystem which has a great diversity of plant species.

Such primeval and non-industrialised communities as the two referred to above, respect or even venerate the environment. They consider themselves an integral part of it to the extent that they believe that some wrongdoing on their part will have serious ecological consequences such as drought or crop failure. Since these communities have either temporary or comparatively small-sized permanent settlements, they obtain from the environment, at any one given point in time, resources that are essential and just sufficient for their needs.

Archaeological evidence suggests that humankind's impact on the environment was negligible and insignificant in the earliest times, i.e. from about two million years ago, when homo sapiens is believed to have evolved. Perhaps there was some localised impact accompanying the deliberate use of fire which - as far as unequivocal evidence goes - began about half a million years ago with homo erectus in China.

However, human impact on the environment became very notable from about 10,000 years ago with the beginning of farming, animal domestication and living in rather permanent, larger-sized settlements. Forests or other types of local natural vegetation were destroyed to create space for farmland and selected animal species were protected and gradually isolated from their wild relatives. This significant impact or assault on the environment has taken on alarming and critical dimensions since the industrial revolution in Europe with the burning of fossil fuel, the slave trade and later on with mechanised large-scale farming. In more recent years the situation has become catastrophic due to the dumping of chemical wastes, the pollution of air and water, and nuclear fall-outs.

This disintegration of Creation by humans can be attributed to at least eight causative factors.

1) Humankind's greed in producing more food and material goods than it reasonably requires for sustenance and survival as well as the acquisition or appropriation of more energy than should be it's normal share.

2) As a consequence of excessive productions, there is what can only be described as wicked wastage of resources.

3) Man's ambition and lust for power to enable him to control the means of production as well as territories where production is taking place.

4) Human egocentricity, which leads us to regard ourselfes as the centre and peak of Creation to whom all else must be subject

and for whom all else is valuable only in so far as it is useful to us.

5) Man's great potential for bringing about deleterious changes in the environment in order to satisfy his perceived needs of, e.g. food, shelter, clothing, transportation, aesthetics, defensive and offensive weapons - this potential is by far greater than that of other contemporary components of Creation because of man's high level of intelligence.

6) Man's ability to manipulate the breeding systems of plants, animals and of man himself, culminating in the so-called "genetic engineering".

7) The average industrialised, urbanised man has become distanced from the rest of Creation (especially the non-human, but including the human as well) and has consequently lost respect for and identification with it;

8) Finally, a selfish lack of consideration for the well-being of other humans and of Creation in general.

Some of the manifestations of the disintegration of Creation are, firstly, a drastic reduction in species diversity with a resultant decrease of the intrinsic homeostasis, thus rendering the ecosystem fragile and more easily susceptible to catastrophes such as attack by pathogenic micro-organisms; secondly, the impoverishment and loss of soils, resulting in decreased biomass production, climatic deterioration and desertification; thirdly the creation of "ecological refugees" who have to abandon unproductive, abused land; fourthly, poverty and a much lowered quality of human life, particularly for peoples whose main subsistence is primary agriculture; and fifthly, the pollution of the physical environment, which has caused the deaths of plants, animals and people.

1.3 REDEFINITIONS OF SUSTAINABILITY
(by Darryl D'Monte)

Man, as an integral part of Creation, has threatened the very survival of his own species. This is not just a spectre of the future, but a contemporary fact. In many parts of the globe, man is simply not able to survive in the face of ever-dwindling resources, food itself, water, wood and other forms of energy.

The famine in the Sahel is a grim reminder of the contemporary reality. It may be just a precursor of mass starvation elsewhere on the earth. For example, in the year 2000, which is only 13 ominous years away, as many as 1 billion people will be living in several neighbouring countries in the shadow of the Himalayas. Their entire life-support system depends on the well-being of these mountain ranges and on what they do to further degrade that environment.

While in some countries human survival may be perceived to be in peril because of the possibility of nuclear war, in others it is because of the sheer unsustainability of life itself. Ironically, the very attempts by people to survive may lead to a reduction in the availability of resources, thereby contributing to a vicious

circle. Poverty forces its victims to denude the environment. This threat may confront only poor countries today, but the causes of this insustainability of life lie at least partly in social injustice: in the excessive consumption of the world's resources by the rich countries as well as by the elites in the poor countries. The rich countries consume 80 % of the world's energy, and 85 % of it's paper. The relentless quest for more materials and markets in poor countries has contributed to this situation. The lopsided emphasis on armaments not only in the North but the South as well, means that resources otherwise used for the well-being of people, are diverted. In 1985, over $ 900 billion were spent globally on arms, equal to almost $ 1,000 for every simple person among the world's 1 billion poorest.

Furthermore, the very attempt to redress this balance most often referred to as "growth" or "development", may actually worsen the situation, instead of improving it. For example a decision by many poor countries to go in for large-scale industrialisation, can not only place too heavy a strain on resources but limit employment opportunities to the few that are fortunate enough to find work in factories. This form of growth or development, therefore, can amount to further impoverishment of a larger number of people than those who benefit from it.

It is necessary to re-define growth or development as any process which sustains life, rather than degrades it. Unlimited growth is no longer the unquestioned goal of any society: to borrow a parallel from the natural world, no parent would consider with equanimity the prospect of a child growing to "superhuman" proportions. Nor is the notion of "trickle down" unquestioned, ie: that the affluence of a few in an industrializing society will filter down to those, who are denied industry's benefits. The alternative is more promising, that is that we first look to the needs of the neediest in any society, those whom Mahatma Gandhi called the "last man". Within a deprived community itself, the condition of women and children are often the worst. Development which begins by addressing the needs of women and children will almost inevitably prove resource-generating , rather than resource-depleting.

The ability to make life sustainable has important implications for the carrying capacity of every human society. Rather than view human populations as placing intolerable demands on resources, the carrying capacity of a country can well be enhanced considerably by proper management of the environment. Furthermore, the sustainability of life has a direct impact on population growth. Once people are reasonably assured of adequate nutrition and health and that new-borns will survive till adulthood, they will stop producing so many children. If wood for fuel, and water were more easily available to people, they would not have to walk ever-increasing distances to fetch these resources, and they would not need to have so many children to perform these everyday chores.

2. THE INTEGRITY OF CREATION

2.1 MISLEADING ALTERNATIVES
(by Adelbert Schloz)

Some religious alternatives have blocked for a long time our conception of nature and creation, and they mislead us still today. We may designate them according to the following five pairs of categories:

a) theology or cosmology;
b) revelation or creation;
c) creationism or evolutionism;
d) apocalyptical destruction or world conservation;
e) theism or pantheism (anthropocentrism or cosmocentrism).

a) Theology or Cosmology: As society evolved, the sciences and the arts and humanities were alienated from one another. The world became explicable without the assumption of a creating God. Science wanted to get rid of religious prejudices. Theology began to retire from the cosmological field and concentrated on history, texts, human existence, and on the relations between human beings and God. The distinction was deepened between existential and objective truth, between understanding (Verstehen) and explanation (Erklären).

This historical development induced theology to overstress a biblical fact: the people of God, the nomadic tribe of Israel, was not primarily interested in nature and cosmos but in history, and Israel's God was not regarded chiefly as the Creator but as the Saviour. Israel understood its election as the obligation to separate not only from other peoples but also from their adoration of natural forces and localities, of sexual generation of life. This led to the demythologization of the idols. The belief in a Creator and in a Creation has therefore been regarded by theology as a very late fruit of the discussion with the Babylonian view of the world, and therefore as not genuinely biblical.

b) This evoked the false alternative: revelation or creation and led to the assumption that Creation has no revelatory dimension. This led to the "disenchantment" (M. Weber) of nature, to the desacralization of matter.

Another factor must be considered: in the 19th century already there arose a sort of philosophical and theological vitalism. Nature and human evolution were regarded as a source of the original revelation of God, of natural laws of life, of the authentic sense of life etc. Social Darwinism combined with chauvinistic theology, discredited the field of nature and Creation in the eyes of those who held serious biblical beliefs. There was the confessing and resisting minority in Protestantism between 1933 and 1945 (D. Bonhoeffer, K. Barth). Theology began to condemn all natural theology (theologia naturalis).

c) This debate has nothing to do with the third misleading alter-

natives: Creation or Evolution, which paralysed until the present time the anglo-american religious and theological sphere. Creationists believe that there is no natural evolution in space and time but one divine production; that each pattern of the organism is created separately. Some mean that all species have been created separately, others think only of the separate creation of groups of animals. Homologies of organisms and organs are reduced to a plan or divine concept.

It is not difficult to see that the premises of creationism are no more than anthropocentric. The creationist's view of God resembles a human projection. The actions of the Creator are extrapolated from human conscience. God becomes the object of science against all pretention of creationism. Creationists react rightly to the aberrations of materialistic evolutionism, which refers to the superstition that the beginning and the aim of the history of nature is sufficiently explicable in a monocausal, monistic way. Thus the Darwinian vision of evolution is no mere scientific approach but is mingled with ideological elements: life as robbery and development as a mere struggle for the best adaptation. Creationists, however, are reacting in a theologically wrong and ecologically disastrous way.

Both the creationist's and the non self-conscious evolutionist's model ignore the role of the environment and the vision of the totality of life on the earth as a living organism. They are substantialistic, monocausal and, therefore, neither good science nor good art, but bad metaphysics.

Creationists and evolutionists of that kind misunderstand the basically metaphysical quality of the biblical texts and paradigms. They regard them as explanations, with the pretension of perfection. Then the texts either fail or reality must be subjugated to their literal understanding.

d) Apocalytic Destruction or World Conservation: Closely associated with creationism, fundamentalistic approaches, confronted with the catastrophic post-modernity, try to declare Creation (in the sense of a fallen world of sin) a negligible prelude to God's salvation. God saves, not the world, but his elected humans, from the physical, visible world which he will destroy. The new-testamental, negative determination of "world" is identified with Creation in a metaphysical and idealistic way: All that is visible must be overcome in an apocalyptic "rupture". The faithful then have no alternative: Either they are faithful to the earth and get lost, or they believe in God and lose the world. We can consider this view as a non-legitimate abstraction and separation of the new-testamental hope for a new world from the old Covenant and from the fact that Christ did not yet come but had promised the Kingdom of God to come, not in the distant future but right now, when and where the gospel is preached.

The apocalyptic tendencies of the New Testament must not be isolated, and it should be taken into consideration that they refer to the bad schemes and patterns of the world but not to Creation and the world as such. There is in the N.T. the promise and expectation of physical resurrection, of a real new earth and new heaven and the belief that the promised reconci-

liation includes the non-human creature as well (see Mt. 11 a.o.).

e) Ecologists, feminists, new-age promoters tend to establish nowadays the misleading alternative, Theism or Pantheism. They then react to a degenerated imagination of Creation - a criticism we have to take very seriously. While the old theistic view separated God and nature, why not now identify nature and God? This pantheistic vision, however, is problematic, and for the following four reasons:

1) In the given state of the disintegrated world, we would abandon the disintegrated in looking for integrated, unbroken elements.

2) We must not forget that the Genesis texts show how the created world is delivered from manipulative misunderstanding and magic misuse and oppression. The divinisation of natural contexts, forces, or animals does them no good but separates them and makes us expect something from them which they cannot provide. Ecological wisdom does not mean a return to magic practices, even though the modern rationalism has to regain integrated types of wisdom by learning from the old magic view of reality. Ecology is a science and claims the most efficient modern technologies.

3) Pantheism tends to marginalise humankind and to consider it as a negligible factor. This can lead to cynical consequences: Nature can only be saved at the price of humankind vanishing, or only the ecologically best adapted human being can survive, which means, in fact, the most privileged. This would sentence the poor part of humankind to death. Nietzsche's "blond beast" would perhaps revive as the "ecological beast"!

We should not forget that pantheism is a child of modern times and the religion of those bourgeois people who do not have to fight for their life, but who feel alienated from authentic, real life and who long for the (exotic) "natural" state. It is the religion of the privileged on the sunny side of the street.

4) When we talk about the end of anthropocentrism, we have to define which human being we mean and we should keep in mind that human existence is basically ex-centric. When we dethrone humankind, we should not forget that then the question of human and personal identity arises. If we do not want to replace the anthropocentric mania by cosmocentric depression, which would lead to a new and even more disastrous self-containment, we shall have to deal with the naturally ex-centric and less defined state of human existence, which tends to turn to mania or depression, to powerplay or to complete resignation from responsibility. For the judeo-christian theology the alternative is neither anthropocentric theism nor cosmocentric pantheism.

We have to overcome the bad abstractions of these theistic/-pantheistic models, which know nothing else except substantialistic imagination of a self-conscious reflecting absolute

entity named subject and it's objectivated surroundings, imagined either as "God" or as "human individual" or as "cosmos". The biblical alternative is beyond anthropocentrism or cosmocentrism. It is a theocentric view but with God seen as revealing himself in Creation and in the true humankind. Creation is the cosmos focussed on the natural conditions of life. Jesus Christ is the human focussed on the spiritual conditions of integral human life. With the incarnation of God's spiritually outspoken world, the christological measure of the human replaces the abstract human used as the measure of all things, who either destroys his environment or tends to give himself up to self-hatred and resignation.

2.2 DESTRUCTIVE CONVENTIONAL PARADIGMS
(by Adelbert Schloz)

First of all we have to overcome the conventional anthropocentric view of creation. The human being is neither the ultimate goal nor the crown of the universe nor the measure of all things. Instead, biblically, the Sabbath is the aim of God's history with nature and humankind, their eschatological reconciliation, and the Christ in all his dimensions is the centre. Therefore the elevation of the human being at the expense of the quality of life for the other creatures should no longer be regarded as an absolute value. It probably is an important cause of present overpopulation although we must not forget that overpopulation is not so much the reason of ecological problems in the Third World as one of it's consequences, which makes the situation worse. Conventional theology has regarded the human as the image of God in a very special sense: man means a male individual and one whose mind is isolated from body and emotions, as well as from the relation to others. The so-called deistic and theistic approach to God seems to be the projection of this view of the human into the transcendence: God as an absolute, exclusively acting subject (actus purus). Deus faber: God as an almighty craftsman. This also is a patriarchal approach: The world as God's product, as God's object organised by mechanical rules and as mere matter for man's disposal and dominion. God is regarded as unaffected by God's creation.

The reverse of this view would be the following: To this almighty God the humans can leave all their (ecological) responsibility. The religious interest abandons the creation as pure finite matter and concentrates on the inner life of the soul and the future in heaven. Creation has no future, because it is not a process inspired, accompanied and suffered by God. The expectation of a new earth and a new heaven has degenerated and has been secularized into the imagination of time as linearity with the humans living as if they had endless time, space and plenty of possibilities.

In a similar context we may consider the model of "paradise-lost". After the fall, the Creation is given to the human, as the image of God, to achieve and transform the fallen world to perfection. This model of the perfection of Creation is based on a non-differentiated combination of two texts and traditions of the Genesis (Gen 1 and 2), the priest's and the Jahwist's tradition. According to the first, creation is perfect in the eyes of the Creator. According to the Jahwist's vision, chaos still threatens

and influences creation, and human sin is a fact, when the human enters the scene. Both express a truth: Creation is a value in itself and there is no need to ameliorate it and make it perfect. And sin is a fact that can neither be neglected nor ignored. Sin did not come to be but it already existed and was caused by mistrust in the Creator, by the effort of self-creation and self-containment.

But if combined, both traditions lead to false consequences: at the very beginning there was a perfect world, but the human fell and creation became worse. Sin cannot be explained, it is without any reason. Evil only comes from human. There is nothing chaotic or evil in creation. So runs Augustine's theory. It ignores the fact that the primeval time and history referred to in Gen 1 to 11 is not the description of the world as such, but the prologue to the history of blessing and the Covenant. Later theories are fascinated by the original perfection. Should not salvation encourage the human to reintegrate the fallen world? But this means the fallen world that is the life of the body and is nature. The image of God has to dominate this world full of contingency and sin. So runs the theory at the end of the medieval ages.

The puritans added a variation to this theme: If paradise is lost forever, we have to accept those conditions and make the best of them. Nature is fallen, God's blessing lies in civilisation and industrialisation. M. Weber described how the monastical ethics have been universalised by Protestantism. The Christian has to orient himself/herself towards heaven and "subdue" the fallen world. The ecological disaster is in this way programmed.

Let us conclude from this that our task must be to distinguish integrity of creation from perfection of creation. When we speak of integrity of creation, we must confess the disastrous history of especially European and North-American theology and mission and its influences on the Third World: the denaturalisation of religious life is linked to the destruction of environment and nature, whereas the other religious cultures were often able to adapt to the natural conditions of life. A change of paradigms cannot be achieved without repentance for this European sin, committed against the suffering victims of imperialistic missions.

2.3 WHAT DO WE MEAN WHEN WE SPEAK OF CREATION?
(by Adelbert Schloz)

1. When we speak of creation we mean a theological perspective on reality among other religious and scientific perspectives, a hypothesis the truth and quality of which must be proven by the ecological success in competition with other perspectives.

2. The Beginning is ineffable. - Creation as a general notion is derived from the Hebrew word "bara", which is a non-derivable idiomatic expression for the process of world emergence presented in the Jewish-Christian tradition. All non-Hebrew connotations due to inadequate translations are more than misleading; they are ecologically dangerous (production, work etc.). When used as a noun this may lead to the assumption that creation does not mean a process but the materialised result of a simple and immediate action of God. To say that the world is created by God means that, on the one hand, creation is not

self-emergent and that, on the other hand, life is a mystery which cannot be submitted to human explanations. The text of Gen. 1 is a discussion of faith and superstition. Let us stress some aspects:

- the world does not emerge or emanate from God (theogony). Creation means limitation of time, space, resources, forces and possibilities.

- The world is not the product of a struggle among gods. The power of the Almighty is not due to a struggle and to subjection. God is not absolute because God is self-contained, but because God is fecund and generous. God is not a God of order or disorder, but of peace and of pluriformal life. God utters God's inner life: The model is not production and manipulation but "poetry" and "inspiration" (Word and Spirit). The ecological task therefore is to protect pluriformity. (see point 5)

- Creation means that the world is not divided by the relative dominion of gods separate from each other and competing with one another. There is a universal coherence. Therefore, the ecological task is a global one. If we do not accept this we do not believe in God, but in our national or regional interest-idols. Creation means that there is universal coherence and that everything depends on the totality, influences the totality. Isolated actions must be avoided.

- Creation means that there is no owner of the world except for the living God: Human, political, economic powers, ideologies and interests are therefore not only depotentialised and relativized but also demythologized and demystified. When we say Creation, we confess the living God and we have to mean control of interests.

3. Revelation of God's Life. - Creation is the utterance of God's inner trinitarian life (as God, Word and Spirit) as a process. It is not the product or result of what an absolute, self-sufficient subject produced as separated from God and of lower uncomparable quality. With creation, the view of cosmic reality is limited and focussed. We understand creation as this special space where the conditions of life are given (biosphere), divided and preserved from the natural chaos (according to the different cultures understood as water or desert) and from the chaos, produced by the sin of humanity (flood).

Creation is not defined by negation but by sovereign position. For example, the creation of light is considered to be good by God before the separation from darkness. (This definition is therefore not an act of formal logic or even dialectical logic). Even God did not struggle for creation against chaos. Instead there is a narrow, intimate connection between God(as Spirit) and chaos, whereas the clarifying word and judgement follows this creative "fearless" adoption. The order of creation therefore is not negation of disorder, but lively and pluriform "peace" (Shalom). Creation is not a set or framework of mechanical order.

This has eschatological consequences: If God is not a conqueror, then God's image (the human) must not create its life out

of the chaos by conquering the natural conditions. We are beyond the Cartesian and Kantic points of view.

There is no substantial difference between creation and salvation. While creating, God retires. God is not producing but giving up space of Godself for something which cannot be anything other than God, because God is all, but which cannot be nothing, because God utters Godself in Creation. This is the deeper sense of creatio ex nihilo. God's activity is a creative passivity and God's passion is a creative action.

In the cabbalistic metaphore of self-retirement of God as creation I detect an alternative to the patriarchal view of creation as production of something alien to God, separate from an apathic, almighty, self-enclosed, absolute subject. And it is also an alternative to the model of self-emergence (autopoiesis) presented by modern physics, a model which identifies God and world and thus gives no criterium for the real, true process in natural and historical evolution. The autopoiesis-model is typical for that part of humankind, which still believes in endless growth and progress.

4. Creation as God's Glory: doxological trancendence. As the utterance of God's inner life in a limited way (finiteness), creation is destined to show and to be God's glory (Ps 104). Creatures, therefore, are not defined by extrinsic values or by their self-containment. They live neither heteronomously nor autonomously but theonomously. They all have intrinsic values and do not need to be justified or defined against one another. Whether a non-human creature has the right to live or not, does not depend on the definitions, interests and needs of human beings. On the contrary, human creatures like others fulfill their destiny only when they transcend themselves to the glory of the creator, by transcending their immediate interests, needs and definitions of the other creatures. Creatures develop to that degree in that they give praise to God through thanksgiving and glorification, to the degree that they offer themselves to God in the aspiration of God's Spirit.

Sin hinders this ability of doxological transcendence, either by the creature and life-system itself or by other surrounding systems. Life-systems fulfill their destiny not by containing themselves but by including others and the radical other (death). Created existence is therefore neither working nor playing neither thinking nor speaking, but is eucharisty and doxology. Existing does not mean reflecting, as is stated in the old metaphysics, and life does not begin where systems reflect upon themselves. Not self-conscience but eucharizein and doxa legein mark the quality of life. The more highly developed a system is, the more tolerant and the less demanding it is. Thanksgiving and praise are analogous actions to God's creation. These actions are the contrary of reflecting, producing and consuming, which also have their relative right and measure.

5. Faithfulness to the Biosphere. In the cosmic journey, the human has the vital destiny to concern itself with the earth and not with heaven, which is considered to be the transcendent

but still finite background of the world. The preservation of the living organism of the earth must attract exclusive interest of humankind.

This is the truth of the old precopernician model: The earth is not a negligible factor in the cosmic abundance. The shock of the copernician revolution dethroned not so much humankind as the belief in ideological universalism (Rome as the centre of the world, the privileges of the clergy, centralism etc.) This shock relativized the centralised corpus christianum but provoked a sort of cosmic depression, a violation of the archaic trust in a stable hierarchical order. In a non-geocentric world, there is no confidence in the old authorities, but the general mistrust in reality led and still leads to the consequence that the lonesome individuals begin to create their own world and to assure themselves of it by means of control, research and calculation. The model is then: an individual, lonely "ego", and the empty abundant world. This model is ecologically dangerous.

When we now speak of creation in a postcopernician time, we comfort this aggressive self-containing individual with the vision that earth is something wonderful and singular, without turning back to the image of a stable hierarchial order in nature and society. The ancient cosmic distrust changes into a concrete political and economical distrust in universalism and centralism. And the ego-world-vision is widened: There is congenial life outside of the ego and its mind, there is a communion of the life that is named earth. But this unbearable vision is limited at the same time: the cosmos is beyond human concern and is God's dimension, which we only enter at the price of deep abhorence before the abyss. Luther's distinction between the deus absconditus and deus revelatus shown by Jesus Christ to the faithful, is useful in this connection.

The point is that we have to take into account the fact that the cosmic desorientation in the "Neuzeit" (Modernity) had fatal ecological consequences, as described by H. Blumenberg and H.E. Richter.

6. Integration but not Perfection. The space of life understood as creation is not eternal and therefore not abundant; it is not "the best of all possible worlds", but (in the sense of Winnicott) it is a "good-enough mother", who is not perfect and who must not be "perfected" by human effort, but who can be trusted and is reliable. We have to live with natural catastrophes and we cannot hope to get rid of passion, suffering, contingence, illness and death. Such an attempt must be considered a highly unecological effort, because it would mean the perfect transformation of the natural conditions into a surrogate, controlable "brave new world". In other words, creation is not the subhuman and always threatening chaos, which the human has to conquer, to subdue and control.

7. Creation, History of Nature and Natural Human History. Creation is not nature as an arena for human development and history. Creation is a creatio continua, namely the whole process of the covenant between God and all his creatures. Nature itself is history and human history contributes to the process of nature, because it changes natural conditions. So St. Paul

can say that the creation still suffers under the dominion of sin and that creation is "pregnant", longing for the final integration and revelation of "the glory" (Rm. 8). This does not mean that there are no limits between nature and culture at all. The earth is regarded in the Genesis texts as a garden and therefore as culture, but Jesus regards the life of non-human and non-domesticated creatures as paradigms for a life out of the grace of God (flowers, birds; Mt. 5).

The humans can only survive if they do not transform the non-humanised into a completely artificial world of surrogates. No artificial surrogates reach this wonderful synthesis of beauty and purpose, which is typical of God's creation - of "natural grace".

We should distinguish between humanised and non-humanised creation.

The world, we said, is not created especially and exclusively for humankind. This is the illusion of anthropocentrism. But a "pure" nature, on the other hand, is also a typical human abstraction. It is typical for the modern western type of human, who destroys nature and at the same time wants to be consoled by her. Destruction and adoration of nature have the same roots and belong together like industrialisation/urbanisation and tourism. Both are destructive in their own way.

Two bad abstractions of creation as nature exist: (1) Nature as the dangerous enemy of the human, the source of fear and mistrust, chaos menacing human cultural efforts. The more the humans are alienated from nature, the more they fear nature - a vicious circle. And (2) nature as an esthetic object: The overcivilised human longs for pure consoling nature as an object of contemplation. (Kant: "interesseloses Wohlgefallen"). Nature becomes a goddess, achieves sacred qualities. These modern abstractions lead to a non-realistic ecological optimism and ignore the real, dangerous, chaotic aspect of creation and the material needs of the majority of humankind that suffers from hunger and thirst and the lack of basic needs.

On the contrary, the Christian and Jewish view of creation granted as a "good-enough mother" threatened by natural and human chaos is beyond the conqueror's view of creation as chaos that must be controlled and the romantic-bourgeous view of nature as a goddess who grants everything and consoles even the aggressors with exotic thrills.

The belief in God as creator is beyond this dyad of theism and pantheism, the second reacting on the first but within the same frame.

The created world, involved in continuous creation is a real parable of God and is God's spiritual body; but it is not divine and sacred in the old sense of intangibility.

3. Creation and its Sacrality - Creation is culture and garden, which has to be developed and preserved. In this respect, religious visions like the "sacred universe" do not lead further, because redivinising nature blocks ecological research and technology, which is needed for amendment and recycling,

although we have to learn from the real wisdom of non-Christian cultures which contain vestiges of this vision.

I want to illustrate this with the example how Jesus held the Sabbath. The Sabbath as the seventh day of the week shows creation in integrity. God wants the human to turn back to the Creator and to contemplate God's work without creating and producing something new: sacrality and intangibility. The other reason for the Sabbath is found in the Exodus-tradition. The Sabbath reminds Israel of the gift of freedom, so that Israel should emancipate the slaves and let the fields be fallow. Here sacrality is not intangibility but health, therapy - not integrity but salvation. This is not a protological vision but an eschatological one.

Jesus combines the two traditions: God is sacred because God heals the disintegrated, not because God preserves integrity and condemns the disintegrating factors. The Messiah is the savior, who makes the Sabbath a day of salvation. This point of view is decisive, because today we see people escaping into areas which are ecologically still integrated and with this condemning a large part of humankind, who cannot find this escape, to death.

On the other hand, this ecological maximalism and idealism with all its phantasies of immaculation, of an immaculate original world, is not only romanticism but tends to be affected by desperation.

The truth, however, of the old vision of sacrality and integrity should not be forgotten. The Genesis texts show clearly that although there is a garden, where the human has to work and not immaculate nature, this garden has two intangible centres: the tree of knowledge and the tree of life. The tree of knowledge is outraged, but not the tree of life. The tree of life signifies tabu-zones in reality. I define them as the transcendental conditions of life, of which the humans only profit when they do not manipulate or even replace them by their own efforts to create life. I consider the deeper coherence between mass and energy and the biochemical field of genetic information to be such zones. Perhaps the old imagination of heaven as the conditioning background of earthly life also belongs to these zones. The manipulations of the climate could have irreversible consequences. If we want to manipulate those transcendental conditions of life, we destroy natural grace and then we vegetate and die in a graceless and merciless way.

Creation therefore means also limit to the manipulation of nature, not only responsibility for our actions in the world. "Integrity of creation" has to be considered in the light of these zones, even when the task is not to be seen as reintegration to the origin, an origin which resembles more the projections of an overcivilised western culture.

2.4 THE INTEGRITY OF CREATION: BIBLICAL AND THEOLOGICAL BACKGROUND OF THE TERM. (by Douglas John Hall)

The term "Integrity of Creation" is of course not a biblical one nor has it an established meaning in the conventions of Christian dogma. It does, however, express important dimensions of the Judao-Christian understanding of the world in God's intention, and in fact it captures in a single linguistic device much of what must be regarded as the essence of the creation as it is conceived within the tradition of Jerusalem. Our purpose in this sub-section will be to elaborate upon that claim.

It will facilitate our review of the tradition if we first reflect upon the word Integrity as such. There are at least three - nuances implicit here. We shall discuss each linguistic nuance briefly and relate it to the appropriate aspects of the traditions.

1. Integrity can refer to truth, and especially to the correlation between "appearance" and "reality". - Thus one speaks of the integrity of a person (e.g. a politician or other public figure), and means that his public "image" is trustworthy; between the image and the man, as he in fact is, there is a fundamental unity. Many public figures in our time suffer from a discrepancy, real or perceived, between their actual and their assumed identities, the "image-makers "having created for them personae which, in their daily existence, they cannot emulate; and of such persons it is frequently said, therefore, that they "lack integrity".

   This illustrates one of the significant aspects of the term integrity, which is of considerable importance for our understanding of the theological implications of this concept as it applies to the Christian doctrine of creation, viz, the insistence of our tradition (a) upon the reality of the created order (overagainst every temptation to locate the "real" beyond the material world) and (b) the still more radical claim that the quest for truth, whether scientific or theological, must always relate in a positive manner to the actuality of what is "there" in the world, and not simply impose upon reality theories and formulae, images and world-views which do not and perhaps can not submit themselves to the tests that are set by the created order itself.

   a) Both in its creation- and in it's redemption-theology, the Christian faith upholds the belief,not only that creation is in essence "good" (Gen 1) but also that it is "real". It is real because it is God's work. It is not - as in some of the religious and philosophical views by which empirical Christianity was clearly tempted in its early history - the work of an inferior and perhaps an evil sub-deity, but rather it is the creation of the "high and holy one who inhabits eternity", the transcendent God who "is spirit", but who, nonetheless, wills to have vis-a-vis the divine self a lively, evolving, and in a real measure independent "other", namely a universe combining in the most ineffable way the properties both of spirit and of matter.

The creation sagas of Genesis leave no doubt about the fundamental integrity of this unique combination. Even though the mythology of the Jahwist may assume earlier accounts involving pre-existent or primeval matter, it is clear that God is fully in charge, and that the result of God's creative act is not a duality of spirit and matter but a mysterious union of the two- a union which manifests itself in the most conspicuous way, no doubt, in the human creature, but which permeates the whole and all its parts.

This same propensity of the tradition of Jerusalem (in contradistinction from some of Athen's traditions!) to accentuate the integrity of spirit and matter and therefore to locate reality within the creation, is also upheld by the early Church's struggle against christological docetism. In that historic struggle, which is by no means a thing of the past only, Christians somehow managed - against all odds! - to resist the temptation to sacrifice the real humanity (and therefore the physicality) of Jesus to his divinity, and in so doing they affirmed once more the rudimentary decision of this tradition to regard the created order (the flesh!) as participating in the very truth of God, in what is ultimate. When it looks to Jesus, the church declares implicitly if not explicitly, that this world can be and is the locus of ultimate truth. Not that it has this capacity in and of itself, but that as God's work it bears witness to ultimacy and must never be by-passed by those who search for wisdom and for meaning.

b) This affirmation of the reality of the created order contains the methodological directive that theology too, like science, must submit itself to the tests that the creation as such continually sets for all who claim knowledge of reality. The history of Christian thought bears ample evidence to the danger that religion of every variety may pursue conceptions of reality which not only fail to take notice of what is "there" in the world as such, but which blithely impose upon the world beliefs and "truths" that wholly transcend creaturely being and even, on occasion, repudiate or contradict it.

The Christian concept of revelation has not infrequently been the dogmatic vehicle for such extra - or anti-creational accounts of reality. It is not necessary to reduce revelation to merely "verifiable" truth claim, nor to substitute "natural theology" for a theology that assumes a revelational basis; for in the first place revelation does not (in the best traditions) refer to supra-natural information, but to a dimension of depth or transcendence beneath and in as well as above nature - indeed, it refers to a Presence which lends to the creation the sort of ineffability that prevents (or ought to prevent!) us from regarding the world in a strictly material - mechanical or objectivistic manner. Revelation understood as the human awareness of and encounter with this Presence means that Christians not only are not insulated from the created order by their faith in God, but that that faith drives them precisely into the world, to a

greater curiosity about it, a greater solidarity with it, a greater love for it.

At the level of their bid for understanding, this means that Christians do not protect their beliefs from the world and from those who seek to understand it from other perspectives and with other tools (e.g. natural or social scientists), but rather that they crave dialogue and fellowship with all who are committed to the truth of the creation and to its preservation. The time has long since past when Christians could maintain their versions of truth in isolation - often in defensive isolation. Besides, it is wholly unnecessary for them to do so, because their own gospel assures them that God who redeems the world is also the God who created it, and in fact that the absolute separation of creation and redemption constitutes a notorious breach of trinitarian faith.

To sum up this first point, then: to confess the integrity of creation according to our tradition means to affirm that truth, while not confined to the created order, nevertheless inheres in it and that our theology, therefore, must submit itself to the tests of truth that are given within the created order itself. (For example: a theology which produces a questionable ecological practice is condemned by its incapacity to conform to the laws of nature's conservation and plenitude).

2. Integrity can refer to coherence, comprehensiveness or wholeness. - An entity is lacking in integrity when it is disjointed or fragmented; when its various components do not function to complement and enhance one another but work against each other, and so move towards a state of disintegration. On the other hand, if such an entity - for example a human community or a family - manifests a degree of cooperation, reciprocity, mutuality - if despite their various offices and functions the many members of the community or family are moved by goals and values that are held more or less in common - then we may say (e.g.) that it is "well-integrated. The disintegrative elements that may be (and in human communities generally are!) present are subservant to or superceded by other, integrating forces.

Now it belongs to the Christian confession concerning the world in the intention of God that it is in this sense also an integrated creation. It is this because it is, after all, the creation of God - namely of that God who, in the foundational confession of the community of Israel (the Shema) "is one God". The one God does not create a fragmented and disparate world. The one God imparts to that which this God creates some portion - some vestige! - of the divine unity and simplicity. Unlike polytheistic religions, which account for the apparent fragmentation of the world by positing a variety of (usually conflicting) deities, the tradition of Jerusalem insists that the created order is the work of a single deity with a simple

- though entirely profound - intention: namely to share the glory of God, the glory and goodness of being as such.

The covenant, which Karl Barth called "the internal rationale of creation", is one important biblical expression of this intention. If there is fragmentation in the world as we experience it; if indeed there is radical alienation and disintegration and the threat of total breakdown, this - according to our tradition - is not to be attributed to the divine origin and the divine intention, but to disintegrative forces that have been unleashed or called into being by human disobedience and rebellion. In a word, by sin. Sin, in this tradition, means nothing more - nor less ! - than the refusal of sentient beings to remain within the integrative relational patterns that characterise God's creation, and the attempt (albeit futile!) to have their being independently.

This, however, introduces the primary consideration at the heart of the Christian confession concerning creation's integrity - which we may call its relational ontology. From the tradition of Athens, Christianity inherited a theory of being or reality - an ontology - which regards being substantially. That is, reality was seen to consist of elements or substances which lift every thing about which it can be said that it "is" above the threat of non-being. Amongst other things, this understanding lends itself an hierarchic conception of the universe, because of course it can be argued on this basis that some entities have more and some less of that which makes for being and defeats the negation of being.

While not refusing to make distinctions between various entities, the tradition of Jerusalem begins, however, with a different basic understanding of being. The most direct way of expressing this is to say that for the Jews reality is through and through relational. In fact, if one wanted to express this in the language of "being" (ontos/esse) at all, one would have to say that for this tradition being is not just being but is being-with (Mitsein). The fundamental ontology of Hebraic faith is an optology of relatedness. All that is, is related to all else that is; moreover, its being - the very being of everything about which it can be said that it is - is dependent upon its reciprocity vis-a-vis all else. There is no such thing, literally, as an independent being, a being that is sui generis, self-perpetuating, self-sufficient; a being that has its being. In this faith tradition, the language of possession is always inappropriate, and it is especially inappropriate with respect to the most basic of all alleged "possessions", being itself. I do not have my being; I receive it - daily! "Give us this day our daily bread". I receive my being in my being-with. Even God, in the tradition of Jerusalem (though the formulations of the tradition do not doubt God's aseity) submits Godself, as it were, to this law of ontology. Even God will only be alongside, vis-a-vis, "with": "I will be your God, and you will be my people". The most conclusive ascription of deity to the new born Christ, therefore is the term Emmanuel - God with us.

Now, this relational ontology of our tradition is the rudimentary ontic presupposition of the term "integrity of creation". It is because all being under God - and even Godself in a cer-

tain sense - is being-with that we may and must refer to the integrity of creation, meaning (in this second and decisive sense) creation's coherence, comprehensiveness or wholeness - the interrelatedness of all things visible and invisible.

This ontology informs every aspect of Christian doctrine, not only the doctrine of creation. The redemption that is offered in and through the Christ is precisely redemption from the disintegrative propensities of a society which, in seeking to possess its being and to have security (Babel) loses the integrating basis of its life. The Church - which Paul compares to a body whose several members work together for a common end - is an anticipation of the Kingdom of God, which again assumes the coherence principle, namely the reintegration of that which has suffered brokenness (see Part III).

To some extent, the principle of integration as the coherence and mutuality of creaturely existence has been understood within the sphere of Christian anthropology. At least in the biblical injunction to love of neighbour, this emphasis has had a hearing. But heretofore, partly on account of the admixture of Hebraic with Hellenistic ontological assumptions, and partly because the exigencies of history had not yet called forth from the tradition its potential application to the rest of creation, Christian theology has on the whole failed to apply to extra-human creatures the insights which derive from this Hebraic and primitive Christian sense of the ontic interconnectedness of all life. The present multifold crises of the environment have evoked from significant minorities within and around the churches the will and imagination that is needed to spell out this ontology of communion, as we may call it, to all that is.

3. Integrity can refer to the intrinsic worth of an entity. This is the meaning that is intended, for instance, when someone speaks of respecting the integrity of another person. In such a form of speech, it is implied that the other human being, as an independent centre of being and willing, as perhaps "a citizen", "a child", or "a child of God",must not be arbitrarily set upon by the designs of another, whether that other be a parent, a fellow-Christian, a government, or whatever. The "Thou" (Buber) whom one meets in meeting this other one must not be treated as if it were an "It". Its inner dignity must be observed, and its original mystery honoured. Before the sanctity of the other, one has to bridle one's own intentions and designs, and accomodate oneself to the particularity of the other. Something like this is what we mean when we speak of respecting the integrity of another human being.

What has to be made quite specific today, however, is that the Judeo-Christian heritage in which we stand would have us apply this same rationale to the extra-human and not only to the human sphere. There is an integrity of the creation - of the whole created order, and not only its sentient or articulate representative, the human being. The "thouness" of existences, as Buber has argued, applies to trees and cats and not only to human creatures. The creatures - all of them - have their seeds within them: that is, they contain their own peculiar laws of being, of growth, of development and decay. These laws, the imperatives intrinsic to their existence, can only

be transgressed at peril - and, what is worse, only by those, who have spurned the intrinsic worth of what is. These latter (invariably humans) indicate by their disregard for the integrity of the other, not only that they have lost something of their sense of their own creaturehood, but that they will not succeed, finally, in preventing the process they have initiated from invading their own sphere of identity. A civilisation which starts out to master nature ought not to be surprised by the fact that, in the end, it will have to master also human nature. Genetic engineering and the whole technological quest for the overcoming of chance is an entirely logical consequence of the determination of Modern Western society from the close of the Middle Ages onwards to impose allegedly "human" ends upon all the rest of the created order. The violation of the integrity of the non-human order is only a prelude to the violation of humanity on a grand scale. Auschwitz and Hiroshima - and "the future Hiroshima" (Wiesel) - are born of the same mentality that manifests no fundamental respect for the life of species which Modernity has been pleased to call "lower".

There are many other ways in which we might explicate and expand the connotations of the phrase "integrity of creation", but we take it to be mandatory, given our tradition as well as our present ecological context, that these three should be specifically named, i.e.,

- the implications of creation's integrity for our decisions concerning what is real and true;
- the connotations of coherence, mutuality and the ontology of communion;
- and the insistence of the tradition upon the intrinsic worth of the creation - the world for love of which God "gave his only begotten son".

4. The Role of the Human Creature in Sustaining the Integrity of Creation

We turn now to the fourth aspect of this part of our reflections, and in doing so we encounter what is undoubtedly the most problematic dimension of the whole discussion. What is the role of the human creature in sustaining the integrity of creation?

Of course it will be obvious that the form in which we have articulated the question already anticipates the answer that we shall want to give - or at least the general approach. We assume, and think that in faithfulness to our tradition we must assume, that the human being does have a particular part to play in the sustenance of creation's integrity. This will at once distinguish our anthropological and ecological thought from all those who turn away from humanity as from a species too tainted, too inherently spoilt, to be counted on for any responsibility of this nature. While we feel sympathetic, in some respects, to this judgement that is openly expressed (and silently assumed) by many sensitive persons in our time, and while the Christian understanding of the fallenness of the human indeed permits us to be quite honest in our assessment of human unfitness for such a calling, we cannot join with

those who call for human withdrawal from the rest of the world. This seems to us not only a counsel of despair, but it does not take with sufficient seriousness the grace-given capacity of of the human being to exercise an accountable and responsible role in the created order., While the record of humankind for such a role is ambiguous at best, and often abysmal, there are sufficient intimations of maturity in human behaviour, past and present, to cause one to believe and hope that the human being may be capable of a wisdom and a courage that can face even the grave crises of our immediate and future context, and, so avert the catastrophic dimensions they appear to court.

But as Christians we are prompted to hope, not only because of the empirical historical evidence in favour of human intelligence and good will; we are, besides, the inheritors of a tradition which makes it quite explicit that human beings are creatures who, within the creation itself, are both equipped for and called to a vocation of responsibility and love for their fellow creatures. This tradition may be best described, perhaps, by contrasting it with two alternative models of the human - models which are partly historical, partly constructs.

The first of these may be identified (as we have identified it already in the foregoing text) as that of mastery. It pictures the human being as a superior creature, a "higher" animal - if indeed the word "animal" is to be used at all. It concentrates on the element of discontinuity between this being and all the others, and insists that the vocation of this superior being is the management and control of all the others.

It is well known that many contemporary critics of Christianity and its parental tradition, that of Judaism, conceive this model of the human to be of the essence of biblical anthropology. Many ecologists and others, following the lead of the historian Lynn White Junior, locate the ideological core of the present crisis of the environment squarely within the Judeo-Christian creational tradition, with its divine injunction to the human to "subdue" the creation and to "have dominion over" all the other creatures.

Before rejecting this charge, it is well for Christians to recognize and contemplate its measure of truth. Empirical Christianity (to speak only for our own side of the bibilical tradition) certainly has permitted its scriptures and its dogma to be employed by its successive host cultures in precisely that way. Empire after empire - but more devastatingly perhaps the vast technocratic imperium of our own time - has capitalised on "the Christian connection", with its apparent emphasis upon the human and its seemingly exclusive interest in <u>human</u> destiny.

The elevation of the human to the status of mastery, however, not only ignores the most rudimentary <u>theology</u> of the biblical tradition, which attributes sovereignty to God <u>alone</u> (Calvin), but it bypasses as well the tradition's most salient <u>anthropology</u>, which confesses on the one hand the permanent <u>accountability</u> of the human creature (after all, a creature amongst creatures!) and on the other is consistent in attributing human <u>pretension</u> to sovereignty to rank sin and disobedience.

While denying the promethean conception of humanity in the role of mastery, however, the tradition of Jerusalem also holds out against the antithetical alternative, namely that of anthropos as one merely subject to mastery, a purely passive being, or perhaps one instinctively programmed to do whatever it does. The tradition to which we adhere eschews both the exclusively active and the exclusively passive, both pride and sloth, both the bid for unqualified dominium and the attempt to escape the vocation of servanthood in and for creation. It is because of our commitment to this dialectical tradition respecting the human that we cannot adopt the posture of some of the most sensitive of our contemporaries, who, chagrined by the inordinate claim to mastery on the part of modern Western technocratic society, call for a human retreat from any kind of "interference" in the natural order. It will not be a matter of Christian obedience at a time of massive withdrawal from public responsibility if the church proclaims an environmentally sensitive message, the other side of which provides for an escape from reflective and accountable stewardship on the part of human beings who might play a significant role in changing the world - for the better!

How is it possible, though, to walk the delicate and narrow path between the danger of prometheanism and the danger of a narcissistic passivity? Will one not inevitably veer towards one or the other side of this dichotomy?

The answer belongs to contextual and strategic theology. That is, it will perhaps always and everywhere be necessary, in fact, to emphasize one or the other side of this dialectic. Where human beings retreat from the public realm (as many have thought is the very essence of modern Western societies in the First World particularly), the Christian witness will have to risk being heard as another call to human "interference". Where on the contrary a surfeit of activism and human heroics pertains, the contextually sensitive theological community will caution against inordinate pride and risk being heard as an exhortation to resignation.Yet these apologetic risks do not mean that we are left with an inoperative or merely corrective theory of human being and vocation. A definitive paradigm of the "appropriate" form of human creaturehood exists within our authoritative texts and traditions, and this form or image of the authentically human is provided for our reflection and imitation, not only on the periphery of our faith-tradition, but at its precise centre.

We are referring of course to the Christ, Jesus the "true man" (vere homo). Jesus is no theory, no mere model or example or paradigm, but a real, historical person, and therefore we are not permitted to trea this Person as if "it" were, or contained, explicit doctrinal and ethical directives. Faith means trust in the God whom we encounter in Jesus, and not adherence to dogmas about his deity or his humanity - fiducia, not assensus. What the life of faith and discipleship vis-a-vis the Person Jesus, the Christ, may mean in this or that specific historical context therefore, we are not at liberty to anticipate. No eternal theology is possible, either at the level of theology or of anthropology.

We do, however, have certain guidelines of a theological and biblical nature which will help us to hear the voice of the Good Shepherd in our hic et nunc and to distinguish this voice from those of the false hirelings with their never-ceasing proposals and programs for our humanity. With respect, for instance, to the temptation to human sovereignty within the created order (the paradigm of mastery), it would be impossible seriously to contemplate the crucified one , who moves amongst his disciples like a servant, washing their feet, who makes himself accessible to the poor and downtrodden of the earth, who contemplates lovingly the inarticulate creatures, the flowers and grasses, the birds, even the fallen sparrows - it would be impossible seriously to reflect upon such a Christus, the truly human, and come away from one's meditations with the impression that it was one's human duty before God to lord it over all the other creature and use them solely for one's own aggrandizement. If this one is Dominus, then the "dominion", intended for us by God the creator, must be of an entirely different order from the dominion exercised by the lords of this world - the "lords of the gentiles", as Jesus himself said, who treat their subjects as pawns to be moved about in the never-ending quest of power to establish and maintain itself.

On the other hand, faith's adherence to the model of true humanity presented in the person of Jesus exercises a critical vigilance in relation to the antithetical paradigm - that of human passivity. The man Jesus is, to be sure, receptive, a man of prayer. He is not a dominant or dominating presence amongst his contemporaries, nor is he a zealous "activist", a revolutionary with a program, a militant "leader of men" etc. Yet he does lead. He is a known as shepherd, Master, "Lord". He is also called Teacher - Rabbi. The Teacher Jesus provides a way. It is not the way of power, glory, it is the way of service and therefore of suffering and the cross. For this "true man" wishes to be with his fellow creatures in full creaturely solidarity, and especially with those who have great need. It would be impossible to meditate for long, and with earnest intent, upon the teacher and leader of Nazareth as our exemplar of authentic humanity, and to conclude that it is the divine will for homo sapiens that it should simply blend into the general creaturely condition, refusing to take initiative or to exert itself in any way lest it disturb the delicate patterns of the ecosystem. Such counsel originates from other religious or quasi-religious sources, not from the newer Testament.

For Christians it is the Christ, the "second" and obedient Adam (Romans 5) who demonstrates the role of humanity in sustaining the integrity of God's creation. It is this Word, and no other, that must determine our ultimate response, as Christians, to the "three momentous instabilities of our time" (Charles Birch) that are signified by the theme, "Justice, Peace and the Integrity of Creation". Yet this Word is inexhaustible, a Word for which we must listen at all times and in all places, for it is a living Word, and therefore one which both defies circumscription and makes itself heard through many - and frequently unpredictable - media. Christians who have paid attention to the scriptures and the best doctrinal traditions of our faith cannot doubt, for instance, that in

many of the "Secular" movements, disciplines and concerns which in our time have sprung up to defend earth's threatened species and nurture the life-giving forces of the biosphere they are able to hear the voice of the Good Shepherd himself. God is "at work in the world to make and to keep human life human" (Paul Lehman), and it is not so much our task as Christians to do the ecologically-responsible thing as to try to recognize and name those movements and persons who are already doing it - and to align our mission, as witnesses to the life-giving Word, with theirs.

Finally we identify (out of the many possibilities!) three metaphors inherent in the tradition of Jerusalem which can provide insight into the nature of the human "office" in sustaining the integrity of creation: the steward, the priest and the poet.

1. The Steward The metaphor of the steward, which is prominent in the sacred texts of Israel and the church, is useful in the present discussion not only because of its intrinsic appropriateness, but also because it has achieved in our apologetic context a high degree of communicability. In other words, it has coinage. Many secular thinkers today employ this metaphor to suggest a way of envisioning the role of the human - for instance Hendryk Skolimoski in his Ecophilosophy insists that the "first principle" of this new model of humanity within the biosphere is that of human stewardship. Indeed this ancient biblical office and metaphor has achieved genuine symbolic status in our time. (Cf. D.J. Hall, The Steward: A Biblical Symbol Come of Age).

   This symbol contains three elements or referents that make it particularly provocative for the discussion of the human role in relation to creation's integrity. First, it insists upon the solidarity of the human with all other creaturely existence: the steward, in the biblical material, is a servant amongst servants. Second, it insists upon human accountability for the trusteeship of nature: the steward is neither owner nor master, but must report to another, and must observe the inherent rights and worth of that in relation to which he/she has oversight. Third, the steward symbol as it is developed in the continuity of the two testaments maintains the responsibility of the human creature: the steward (oikonomos), without ceasing to be a servant amongst servants, is given particular responsibilities within the household (oikos).Thus the symbol sustains an important, though delicate dialectical balance between participation in the general creaturely condition and sufficient transcendence of the creaturely condition to enable the measure of caring leadership that is necessary today if human and all life is to avoid subjection to aimless or demonic and chaotic forces (such as that of a "leaderless technology" (Buber) which threaten to overwhelm our fragile civilization and the biosphere as such).

2. The Priest : The basic theological (and political) principle informing the biblical conception of priesthood is that of representation. The priest (or the priestly people) functions representatively in relation to the others. The priest's representative life and work has a two-fold move-

ment: representation of God before the creature, and representation of the creature before God. Jesus' "high-priestly" act in the Garden of Gethsemane is a paradigmatic - and very graphic - enactment of this dual office. He comes before "the Father" as one who bears the burden of (fallen) creaturehood - including the frail creaturehood of his sleeping followers! - and he returns to his little flock, and to the more violent expression of our human alienation in the form of his betrayer and his enemies, as the representative of the divine burden, the burden of a love (agape) that experiences "the cross in the heart of God before there was a cross on Calvary". (H. Wheeler Robinson)

It is the human vocation to occupy a mediatorial, vicarious, and compassionate posture between the creator and the creatures, representing in our persons as in our deeds the one to the other. Under the conditions of historical existence, it is not possible to assume this sacramental posture without suffering - as the great Precedent of our priesthood graphically reveals. For there are misunderstandings between the source of life and the forms that life assumes. There is alienation between creator and creature, creature and creature. There is brokenness. "Nature" is not nicely harmonious, it is "red in tooth and claw"; and sin invades every corner of creaturely being (Heb. 12.1) To assume the stance of priest - Stellvertreter! - in such a world is to invite crucifixion. This too, however, is at the core of our tradition. But so is the wisdom - the "logic of the cross" (R. Niebuhr) - which accompanies and undergirds it. For it is only as the real alienation, estrangement and brokenness of life is entered into forthrightly; it is only as the disintegrative propensities of a "fallen" creation are faced and "taken on", that we may look for some real "mending of the world" (Fackenheim), some reintegration of the creaturely sphere.

3. The Poet: It may at first glance appear that this category, unlike to other two,has been imported from some extra-biblical source; but in fact, though the term may be foreign to our scriptures and regulative traditions, the office for which it stands is not. In the Psalms and Proverbs of ancient Israel, in the poem of Job and the outpourings of Lamentations and Koheleth - in fact in much of the literature generally called "prophetic" -it is poetry that is actually expressed, that is, it is the human imagination, inspired by the "muse of God" - by the divine Spirit - and therefore rising to "the occasion". The occasion? - why, life itself, of course!

Life - creaturely existence - is so vast, so wondrous a thing! Most of the time we are simply not up to it. We wilt like insufficiently nourished flowers before the noonday sun. We sense the grandeur of our state, but we feel an abiding incapacity to do justice to it. We sense, too, that life expects of us some gesture, some token of our conscious and willed participation in its bounty.The impulse to laughter, to joy, to exuberance, to praise is clearly there in us, half formed; it is there in its shadow form in our more often fulfilled impulse to weep, to give way to melancholy, to flee from enthusiasm, to curse. The creation it-

self, with its myriad forms of life, seems to "wait with eager longing" for the liberation of the human soul from its bondage to mediocrity and to silence -

> All nature sings and round us rings the music
> of the spheres.

Is not perhaps the highest vocation of the human creature to be located precisely here? May it not be that the poet, the namer of things, the one who brings to articulate expression the great and subtle energies that surge through all of nature, is more needful than even the steward or the priest? That our human essence is captured more skillfully in the fact of our being homo loquens than of our being homo faber, homo ludens, homo sapiens or even homo religiosus? It is the speaking animal that the speaking God (Deus loquens) desires to meet, as this God calls out into the void to create - as always - ex nihilo. It is the speaking animal with whom God will enter into dialogue and covenant. Speech calls forth speech. The Word evokes words.

But the human creature, when it rises to "the occasion", does not, of course, speak for itself alone (and here we remember both the Priest and the Steward, who are the Poet's other personae). Rather, coming forward as though from a mighty throng of beings animate and inanimate, indeed from the universe itself as a living organism, this small creature, more vulnerable physically and spiritually than all the others, is given the gift and the courage to represent them all - to speak for them all, to put into words (and art, and music and dance) the unspeakable joy and gratitude for being that permeates all that we call life.

3. THE RE-INTEGRATION OF CREATION

3.1 INTRODUCTION - PART 1
(by James Lovelock)

Let us now consider the view of science on the possibilities for the restoration of integrity of creation.

First we must recognize that however bad things may seem to be from a human viewpoint - the atmosphere corrupted - the rivers, lakes and shallow ocean waters polluted or over-fed with nutrients - the forests irreversibly damaged in the tropics and replaced by low-grade farmland or desert. And even in the northern temperate regions ecosystems disrupted by the roaring stinking machinery of agribusiness.

Bad as all this is creation is not destroyed nor is it even likely to be whatever wrong we may do.

The integrity of our living Earth depends as much or more upon the humble micro-organisms as it does upon flamboyant creatures like trees, lions and ourselves. The micro-organisms ran the world for more than two billion years and could do so again. But if they did, it would be a very different world from the one we know. The damage that we have done is nowhere near so great as that the Earth endured 65 Million years ago when it was blasted by the impact of a small planet ten kilometers wide and travelling at 60 times the speed of sound.

That event released 1000 times as much energy as would come from the explosion of all the nuclear weapons that now exist. Almost all life in the oceans was destroyed and 60 % of the species on the land were eliminated. Yet creation endured and the scene was set for the emergence of humans as the first intelligent social animal rather than a representative of the great lizards.

We can only guess what will happen to creation if we continue to corrupt and disrupt the natural world. First, the guess of what will happen if we accept the professional conventional wisdom of either: A passive biosphere on an inanimate planet or the more common view: A loose coupling between life and the environment where each can affect but not control the other.

If we accept either of these views then the growing abundance of the green house gases carbon dioxide, methane, ozone and halocarbons together with the decreasing reflection of sunlight by clouds above the tropical forests as the trees are taken away. Together these effects of humankind conspire to give a fearfull production of heat and aridity by the middle of the next century. The worst scenarios envisage deserts with mean temperatures of 50 degrees C over most of the tropical land masses. A story in which Sahel is written across what was the lush and abundant forests of the humid tropics.

If however we take the model of a living Earth as our guide then our present sinful ways would have a different set of consequences. A living system if perturbed acts to keep its integrity. This is homeostasis. A man or woman who suffers the loss of 10 % of skin by burning will recover completely enduring only pain and

possibly some disfigurement by scars. But a burn affecting 60 % or more of the skin is always fatal.

Creation is not so easily destroyed but the ecosystems within it are vulnerable. The Amazon lost 10 % of its trees by burning but still persists as an ecosystem. However there may well be a limit to the destruction of this vast forest beyond which it can not survive.

In the face of ignorance about this limit an important part of our program for re-integration is the idea of "Planetary Preventative Medicine". There is a parallel here with our response to the disease AIDS. We know no cure but we can make sure that all know how it spreads so that they can personally lessen the risk of catching it. Similarly we need to inform the inhabitants of the forest regions of the part the trees play in keeping their lands air conditioned and of the consequences of destroying them.

But if we push the system beyond its capacity to restore the present state? It will not die - the micro-organisms of the oceans, sediments and soil will keep it alive. But it will move to a new and different atmosphere and climate that is unlikely to be favorable for people. It might be much hotter than now with much more carbon dioxide in the air. Or it might move to a new glacial state that would bury the industrial countries under mountains of ice, but greatly enhance the tropics as a place to live.

Models drawn from geophysiology of a living planet clearly indicate that those species that adversely affect the environment are doomed but life goes on. These models also reveal that the physical and chemical constraints that circumscribe the conditions of life's tenure on a planet are a necessary condition for stable homeostasis. Freedom from constraint in these models leads to chaos and death. A metaphor for the human condition.

So what can we do to re-integrate creation? If conventional scientific wisdom is correct and there is a direct connection between the extent of pollution and deforestation and their adverse effects then we simply need work to restore creation to its natural state. If however we are insulting a living Earth then our approach to restoration should not be that of an engineer but rather that of a physician. Above all we must keep the Hippocratic Oath "Do nothing that would harm the patient". Make certain that the cure was not worse than the disease.

Scientists who are not thinking geophysiologically often argue that the forests of the tropics should be preserved because they may have in them plants that contain drugs that would cure disease or that they represent a valuable gene-bank, or that the elimination of exotic wild life is a shameful destruction in itself. This is all true but they are not arguments that would much move a hard headed business-man, or politician nor a starving peasant.

The geophysiological argument that the trees by their evapotranspiration of water keep the clouds and the rain and the environment of the trees is more convincing. It illustrates that the trees are part of a living system that includes the peasants and the business-man and the politicians. To destroy the trees threatens the lives of the all.

What to do?

In geophysiological systems it is always the action of an individual of a species that initiates change. If the act favors the survival of its progeny then that species will succeed and the environmental change associated with it will be sustained. On the other hand individuals that adversely affect their environment are less likely successfully to raise progeny and will tend to die out.

Applied to humankind this means that each and everyone of us have a personal part to play in the restoration of the integrity of creation. Such is the power of positive feedback to amplify the effects of small changes that large personal sacrifices may not be needed; things done in moderation on a large scale can soon bring about the needed restoration.

What kind of acts are needed now and in future? They should be acts that in some way benefit the individual directly as well as the environment at large. Each of us must find a personal solution but as an example I find it helpful to keep in mind the three deadly "C"'s: Combustion, Cattle and Chainsaws. Thus, for example, to eat less beef - if the clinicians are right - is personally beneficial, it will also relieve some of the pressures on the tropical forests.

3.2 INTRODUCTION - PART 2
(by Adebisi Sowunmi)

As pointed out in the section that dealt with the disintegration of Creation, all Creation was one integral entity even at the time, when human ancestors appeared on the scene about two million years ago and it remained virtually so until about 10,000 years ago. This state of primeval wholeness and harmony as seen from both an ecological and anthropological perspective seems to be equivalent to what was repeatedly referred to in Genesis 1 by the expression "and God saw that it was good ..." - meaning each and all phases of creation. In the face of the catastrophic and annihilating disintegration of the creation brought about by humans, there is now more than ever before, a compelling obligation for humankind to take urgent and perhaps drastic measures to reverse the present trend towards self-destruction and actively work for the re-integration of creation.

Apart from the fundamental ethical and theological rationale that should motivate and give direction to this process of restoration, there are ecological and practical realities - literally matters of life and death - that make re-integration obligatory. There is just no other way out! Should the present suicidal disintegration of Creation continue, there may not be enough food and energy resources to sustain the vast majority of human populations while marine and atmospheric pollution may make the biosphere uninhabitable for all within the next 100 years.

3.3 RE-INTEGRATION OF CREATION
(by Darryl D'Monte)

The re-integration of Creation will have to begin by examining the relationship between man, other species and natural resources, within each society.

What resources are being consumed?
Who is controlling these resources?
Who will consume these resources?
Whose labour provides these resources?

Between countries, too, some of these very questions can be raised.

In the First World the true picture of enormously wasteful and socially unjust consumption will emerge. It will be apparent that resources are attracted to these countries far in excess of actual needs and at the cost of the integrity of the well-being of peoples in many parts of the Third World.

In the poor countries, on the other hand, such a "natural resource audit" will reveal that there are enormous disparities between the consumption patterns of a tiny ruling elite and the majority of people. Although many of these countries have won independence from their former colonial masters, they have still not shaken off attitudes and practices which were characteristic of their rulers. They have perpetuated the exploitation of people and neglected to provide even the basic means of sustenance. Of course, a neo-colonial system also exists, whereby many of these countries are providing food and other resources to the First World at very low prices, which reinforces unequal relationship.

In the First World, a realisation that consumption patterns will have to be adapted to meet ecological, sustainable standards, will have to be accomplished by production methods that cater to need, rather than greed. Making do with less need not imply any sense of diminution, but an enhancement or enrichment of lifestyles.

The problem is different in poor countries, where far from calling for a slow-down in consumption and production, there is a need for stepping up the generation and consumption of resources so as to enable people to live with at least the bare minimum to ensure their survival. Much more can be produced with existing resources and technology in the Third World. For instance, production from present acreage under crops can be substantially increased not by heavier doses of fertilizer or irrigation but by proper stewardship of land and water resources, the resort to ecologically sound practices that used to characterize so-called primitive societies. This should not sound like a plea for pre-industrial values but a return to those principles which recognized that life could be sustainable by producing enough - not by producing as much as possible. This approach should not rule out any advances in 21st century technology which can aid this pattern. To take only one example, the predictions by satellite of weather patterns can help farmers manage their agriculture better. To carry this illustration much further, it may be possible to work out, with the most sophisticated technology available, what is the minimum amount of land required to grow crops and

other resources to meet the needs of the entire society, leaving the rest of the area free for ecological regeneration.

The resources freed in the First and Third World from a reduction in armaments can also be used to raise peoples' living standards, The peace movement has proceeded independently of the ecological movement sometimes, but the two are coming together along with movements for civil liberties, womens' liberation and other peoples' rights. All these strengthen the cause of Justice, Peace and the Integrity of Creation.

Neither of these processes - a halt to consumption in richer countries and the raising of living standards in poor countries - is as difficult to initiate as it may sound. Industrialised countries, for example, are already moving away from manufacture of goods to the processing of data and information, which obviously places far less strain on the use of resources. What is more, the very achievement of prosperity has brought about, in industrial societies, a situation where population growth rates have tapered off. Even if people do not tighten their belts very much in these societies, there will be fewer of them in future.

In the Third World the move to maintain ecologically sound production methods will not only lead to improvement in living standards and health, but also, in the long run, to a lowering of the birth rate. Demographers point to certain small countries and states within larger countries which have achieved this, some not with any growth in the conventional sense of the word, but by better re-distribution of resources, and the liberation of women. Social justice, therefore, is an integral part of the process towards the re-integration of creation.

3.4 WHAT TO DO?
(by Adebisi Sowunmi)

One of the first steps towards a re-integration of creation is education. This process of education should be undertaken as a multidisciplinary (integrated) endeavour, by, inter alia, scientists, sociologists and theologians. People must know in plain and vivid language what the state of Creation was and should be in contrast to what we have now made it. Such education should aim at awakening the conscience of the general public in all nations to act as individuals and to serve as pressure groups in bringing about attitudinal and policy changes, respectively. It is recognized that such pressure groups do indeed already exist and are active in some countries, but there is still a great need for many more of such groups in different parts of the world.

There is also the need to educate those in the rich countries on how their wealth as nations was and is still being acquired - largely at the expense and to the detriment of peoples in the so-called under-developed or developing world. Walter Rodney's book entitled "How Europe underdeveloped Africa" is but one of numerous appropriate references. Such essential enlightenment will go a long way towards creating healthy and positive motivation and attitude in adopting measures aimed at restoring global ecological balance. Thus, e.g. the industrialised nations will have to cut down on their use of the agricultural lands of developing countries from where they obtain raw materials for their indus-

tries and livestock - such use effectively deprives the indigenous people of many of the benefits of the produce from their farms.

However, one must quickly add that the governments of the affected developing nations must radically overhaul their economic policies such that e.g. farmers are encouraged to grow more food crops under a sensible land management system. Furthermore, the export of raw materials should be drastically cut whilst efforts are intensified to use these materials in local industries.

Secondly, citizens, having been well informed regarding the environmental crises highlighted in this document, should urge and ensure that their governments co-operate with the U.N. in the proposed global implementation of those recommendations of the Brundtland report that will make for a re-integration of Creation. This means that they must study this report. Churches, institutions of learning and the mass media should help in propagating this report.

Thirdly, a stable and democratic political climate, particularly in the developing world is a conditio sine qua non for sustained and internally consistent efforts aimed at the re-integration of Creation.

Fourthly, we need to re-discover and appreciate the physiology and homeostatic mechanisms of the non-human components of the ecosystem with a view to applying this to human interaction with the rest of Creation and with one another. For example, green plants do not absorb excessive amounts of water and dissolved mineral salts from the soil neither do they store solar energy in its "raw" form. Ecologically speaking, green plants are not greedy, neither do they waste (solar) energy nor appropriate more than they need. It may sound strange or ridiculous but we have a lesson to learn from green plants which are the most efficient natural users of solar energy. (Did not "The Preacher" admonish the sluggard thus "Go to the ant, thou sluggard, consider her ways and be wise"?) An ecosystem has an in-built mechanism by which it regulates its populations. Furthermore, an ecosystem has an in-built self-regulatory mechanism for regulating the populations of its biological (non-human) components. Such an ecosystem is said to have reached a dynamic "steady state" and makes the most efficient use of its energy resources.

Fifthly, there is need for repentance and a change of attitude towards both the non-human as well as the oppressed human components of Creation, i.e. women, children, the youth, the poor and the dispossessed as a consequence of which their intrinsic worth is recognised and they are accorded due respect, in full consciousness of the fact that for God, the omnipotent Creator, all of Creation is of value and is within His care, love and plan.

3.5 THEOLOGICAL IMPLICATIONS
(by Adelbert Schloz)

Our theological concept of the integrity of creation is rich in ecological implications. To sum them up:
- God loves this planet - ought we not return this love?
- In God's love God is so much involved in Creation that God suf-

fers from the disintegration. If God had promised in the gospel to bear the consequences of what humans have done and still continue to do to creation, we as human creatures would neither have the right nor the chance to survive. But we see the Cross in the light of Easter, and so we believe that God in the Spirit continues and that his creative passion is a passionate and forceless sublime but irresistible activity.

Re-integration of the Creation can be compared with the building of a cathedral - only that we do not have as much time as had the medieval masters to achieve it. This paradoxical situation causes either resignation or aggressive self-hatred and cynism. We avoid this deadly alternative, when we try to regain the Spirit's long breath.

But first of all we have to stand and sustain the disintegration. We can do it because God suffers representatively in a double way: God demonstrates the creatures suffering of disintegration and provokes the compassion of those who are sensible enough to suffer with their victims. This opens a prophetic and even messianic perspective on the disasters. They are neither negligible by-products on the way towards a doubtful economic progress, nor are they ecological death sentences pronounced over naughty children by their mother Earth. There is hope granted to us against all hope and it encourages us to present a program of re-integration of creation to the communities.

Christian Communities must therefore encourage all ecological movements and activities without ideological, religious or denominational restrictions. And every community should begin with its own region. Like communities of prayers in totalitarian systems, we must list the victims and mark the lost ones and remember them. This concerns the threatened species but also all threatened conditions of life in the small creation around us. We must act in solidarity with the threatened environment in our regional topography.

Communities should create committees of responsible persons who work out lists concerning the ecological topography of the region - beginning with the ecological state of the church administration and religious life. (How unattractive to nature are our services, prayers, images of the living God?) God's easterly spirit opens our horizons beyond our mean and narrow-minded desires. The spirit opens the horizon of the Kingdom of God that is of the final "oikos" (home) that means universal household, into which the disintegrated creation will be transformed (ecumenism, ecology and economy).

It is to be seen and experienced when we start our thinking and caring not as usual from the present, not from the human, but from this eschatological perspective which consists of our far away neighbours in time, in space and in species. We mean the unborn, who depend upon our decisions, who do not vote. We mean the most humble members of the universal body, women and children of the so-called Third World. We mean all non-human creatures, our neighbours in species. Let us behave as stewards, advocates of the silent nature and as priests among the universal celebration and communion of life. Let us regain the Sabbath and the Sunday as a healthy and sacred time, when creation can breath the spirit freely again. Our neighbours in species need no longer

domestication and dominion but care and advocacy. The non-human part of the biosphere needs recognition, perhaps their rights should be established by a charter of the United Nations.

Our human existence wants to be changed by God's Spirit from destructive deadly concupiscence and greed to a common eucharisty which can be shared by our neighbours in space, time and species. The self-centred humans are, in fact, disintegrating, but in God's salving name they are still invited to this eucharistic creation.

By accepting this invitation scientists for example begin to reintegrate their dangerous role, they become sensible for the consequences of their work. They feel redeemed from the deadly illusion of scientific innocence. Living in christian communities enables them to share their life with those affected by their inventions and techniques. Such a changed human species will be an electorate sui generis, with which politicians, who are keen rather on majorities than on truth, will have to count. Lastly, such a human species will begin to know what it means to be sinners, to be fallible creatures with fallible techniques. The change of mind and of lifestyle will be experienced not as a painful moral effort but as a delivering exodus from the Egypt of disintegration, of which we as human creatures begin to suffer. It is not fear and desperation which urge us but the spirit of God's creative passion and passionate creative process.

3.6 TOWARDS ECOLOGICAL RESPONSIBILITY: WHAT CAN CHURCHES CONTRIBUTE?

(by Mady A. Thung, Rolando Mendoza, Bernd Schulze)

In many cases the ills have been identified and possibilities for cures are known. But that does not mean that these are put into practice. Although change is characteristic for our age, change towards more just and ecologically more responsible production, distribution and consumption is extremely hard to achieve. What can churches contribute to the process? This might well be explored with the help of some examples.

Example 1:

Before the massive use of chemical products, agriculture cultivated the soil by methods which were in harmony with the natural balance. Thus in Central America for more than a century coffee (an important export product) was grown by using the system of "mixed crops". This means that besides the main product, other plants were cultivated, as is still the case in the traditional plantations, where together with the coffee a hundred or more species of trees, bushes and herbs grow in the fields.

Trees which give shade, like some leguminosae are very important because microorganisms live in their roots which favour the binding of the atmospheric nitrogen to the soil. Furthermore these trees are an energy source providing wood and fodder for domestic animals such as cows and goats. Appropriately distributed in a traditional coffee plantation you also see fruit trees and trees that give useful timber, banana trees and medical plants. The borders of

every plantation consist of living hedges, which also yield wood, fruit, flowers and new posts for fences.

This mixed system maintains the diversity of life in the soil where algues, mushrooms, bacteria and a large variety of invertebrates guarantee the good physical and chemical consistency of the humus. Together it forms an agro-ecosystem which the farmer handles wisely and of which he obtains continuous benefits.

Since the introduction of agrochemicals (fertilizers, insecticides, fungicides and herbicides) producers keep their eyes fixed on the goal of ever increasing rates of production. The traditional coffee plantations are destroyed, the diversity of crops is substituted by the monotony of a modern coffee plantation which only aims at a high rate of yield, brought about by massive application of agrochemicals.

It is, in fact, possible to obtain a greater quantity of coffee per cultivated hectar of soil, but only at the expense of ecological, aesthetical and economic disadvantages.

This change in the use of the soil has the following consequences:

1. The farmer abandons the growth of mixed plants for fruit, wood, flowers, medicine and fodder, in favour of monoculture.

2. In the large unprotected fields the soil deteriorates increasingly and needs an ever larger dose of agrochemicals.

3. The undiscriminating use of agrochemicals interferes with the ecological processes, contaminates the environment (air, soil and rivers), and damages the health of both the farmers and the consumers by toxic residue.

4. The top soil is less protected and becomes more easily prey to erosion.

5. On a modern coffee plantation you need less labour, which leads to an increase in unemployment.

6. The coffee plantation loses much of its aesthetical value.

General comments

We believe that there is resistance to large scale changes because of:

- unawareness of the long-term effects, among consumers, distributors and perhaps even cultivators, as well as governments and the larger public,

- short term economic interest in the quick yielding method which provides both cheaper production as well as consumption,

- habits and general reluctance to change.

Analyses such as these provide ideas about possibilities for change, for instance:

- circulation of knowledge (which may involve campaigns, prolonged education, demonstration of alternatives, both among growers, distributors, governments, consumers and the public - at large.),

- provision of incentives (subsidies) on either the production and/or the consumption side,

- government legislation or regulation in the interest of restoring a diversified coffee culture; intergovernmental agreement to promote this on an international scale,

- facilitating changes in life styles.

Today, distribution centres in many European countries provide such facilities to consumers who are aware of exploitative methods of distribution and production. So-called "Third World Shops" sell products from community self-help projects circumventing large scale Western-owned production and distribution companies. There is another chain of distribution for "eco-products" from "biological" farming in Europe itself. The two movements may well be combined, but at present both seem to be marginal. Various government measures of support are imaginable for which churches may press (as they already pressed for funds for the self-help schemes). E.g.:

- subsidies to distribution centres or for prices of the products, as well as tax reductions,

- subsidies for educational campaigns,

- legal protection for trade-marks indicating "eco-products"; obligatory indication of production methods on the package of all products, etc.

Other subsidies may support the conversion of plantations (e.g. coffee) into ecologically sound systems. In general governments should be made aware of this need. The World Bank and other funding agencies should be exhortated to support ecologically sound and sustainable programmes. Again, churches must be among the NGO's campaigning for these issues.

Moreover, church members in responsible positions must work for change, by improving communication in the press, by broadcasting, by teaching in schools, by working in government posts, and - most importantly but delicately, too - by influencing policy decisions in commercial companies.

Private initiatives such as producer-consumer co-operatives as well as government measures, may provide examples of new production and consumption methods.

Example 2:

The Cunas are living in a harmonious relationship with the tropical rain-forest at the Caribbean coast of Panama. Their population is about 30 000. They are satisfying their basic needs by using the goods of the forest and the sea and they developed an appropriate system of use which is highly sustainable. The surrounding "campesinos" put many pressures on them. During the last 500 years their territory had been reduced and they were forced to move to the mountain-coastal area. Today this area is under legal protection and the Cuna are taking care of it. They are receiving some technical assistance from different scientific organisations but they keep their own autonomy.

In this case the only thing needed is that the self-respect of the Cuna-culture is maintained so powerfully that Western culture will not intrude upon it. Christian churches may well help to stimulate the admiration for this way of life, so that future generations of Cuna will not give in to temptation of commercial exploitation of the forest.

General comments

In general one can say that the churches can contribute to change towards responsible behaviour:

1. by exerting direct pressure on governmental, business or other powers, by such means as lobbying, using publicity, or silent diplomacy;

2. by injecting more or less authoritative opinions into the public arena which may influence public opinion;

3. through the activity of their members, laymen and women in their own right, working from specific positions in society, each in their own role, or concertedly in informal circles and movements.

Each of these three means has its own advantage and disadvantages. Moreover, in a world filled with the most diverse power centres, interest groups and pressure groups, none will be very influential unless working in coalition with other powers. The best chances, therefore, to effectuate changes in accordance with Christian ethical thinking, are present when a church works through all the three means and cooperates with like-minded allies as well. To mention a concrete example, a church that pleads for development aid to some Third World country, will be effective only to the extent that its lobbying is endorsed in public discussions by its combined membership. It also needs to have its prominent members who are on government boards, in business enterprises or political parties work along the same lines. It must seek allies in trade-unions, in political parties and elsewhere - and even then the struggle may be hard.

Moreover, it sometimes is difficult to decide which type of production is to be favoured. The examples above may suggest that churches are requested to resort to mere traditionalism, but this is not what is meant. Rather the question is, how to evaluate present modernization processes. In this respect the Brundtland

report offers a criterion of judgement, by its concept of "sustainable development". This is quoted below:

"1. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:
   * the concept of "needs", in particular the essential needs of the world's poor, to which overriding priority should be given; and
   * the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.
2. Thus the goals of economic and social development must be defined in terms of sustainability in all countries - developed or developing, market-oriented or centrally planned. Interpretations will vary, but must share certain general features and must flow from a consensus on the basic concept of sustainable development and on a broad strategic framework for achieving it.
3. Development involves a progressive transformation of economy and society. A developmental path that is sustainable in a physical sense could theoretically be pursued even in a rigid social and political setting. Physical sustainability cannot be secured unless development policies pay attention to such considerations as changes in access to resources and in the distribution of costs and benefits. Even the narrow notion of physical sustainability implies a concern for social equity between generations, a concern that must logically be extended to equity within each generation." (p. 43)

In general one may stress that churches and Christians would be true to their mission if they pressed for changes in production and consumption which would help to:

- preserve the ecological process and

- the genetical diversity and

- guarantee sustainable use of resources.

4. POSTSCRIPT
(by Mady L. Thung and Bernd Schulze)

The two types of church reactions and Christian responses to the global environmental crisis reflected in the paper are:

1. re-thinking our attitude towards nature in the light of our belief that the God of the Bible is not only its creator, guardian and redemptor, but has also bestowed special responsibilities on the human species shaped in the divine image;

2. analyzing the local, regional and international ecological problems caused by devastating developments, and taking concrete action to work for actual change in patterns of production and consumption.

The present document contains examples of each one only. Both types of reactions must be systematized and elaborated. For example:

- With respect to 1.:
  Problems like the following have to be clarified: What type of "system" or "life" is implied in the hypothesis of the earth as a living planet? How much does it illuminate the presently developing theology of nature? And what is the role of humanity as a "link" in an interlocking system of relationships?

- With respect to 2.:
  There have been references to (a) educational tasks, (b) work for drastic reduction of levels of consumption in industrial countries, (c) re-evaluation of modernization-patterns in Third World countries, (d) legal measures for the conservation of some areas, species, etc.

Churches and Christians cannot ignore reality, but rather they have to search for answers to these and many more questions. Many of the changes that are needed to meet present day challenges can start with growth in personal insight and in corresponding attitudes. These will help families, communities and whole regions to convert towards sustainability in an endangered world. What is started on a small scale might end up as a new social concept, as a concept which respects the integrity of creation. Metaphorically speaking: it starts as a small spot of oil on the water which spreads and spreads and which finally covers a large area.

However, all this will never lead to practical change unless churches and Christians co-align with others, e.g. environmental groups, ecologists, other political and economic agencies and parties, educational movements, scientific institutes, etc. - all concerned with present day developments. Most of the problems and the analysis needed to design remedies, are known, but it must be realized that most of this knowledge is not applied, either because there is no economic interest, or because people concerned with "Our Common Future" see no way to take action. This attitude, might be caused by their educational background, their lack of access to information or their political or social situation. Nowadays it should be possible to overcome these restrictions, e.g. via the educational role of the churches; that is why it was

suggested above that the Brundtland report be studied thoroughly by churches.

Moreover, churches have another special dimension: it is the dimension of liturgy, of prayer, of praise to the creator, and of the renewal of our spirit. Therefore, Christians and churches are called to engage in new tasks, at the level of theological thinking, of ecological, economic and social analysis and at the level of practical action. They should be engaged in re-shaping their congregational, social and political life in a manner which will constantly remind people of the integrity of creation.

THE WHOLENESS OF GOD'S CREATION
- A SELECT BIBLIOGRAPHY
(by Ans van der Bent)

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